DWM STRONG-JACKET-BULLETS

(PATENTS APPLIED FOR IN MOST COUNTRIES)

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What are Strong-jacket-bullets?

"Strong-jacket-bullets" is the name given to a new kind of bullets, where the front part of the bullet-jacket is thin and weak, but the rear part very thick and heavy. This rear part of the jacket is not only solid enough to remain undestroyed in its main part, when shot at game with a high powder charge, but the rear part has still weight enough that even if the front part of the bullet is torn away, the remaining mass maintains sufficient penetrating power to pass right through the animal hit.

Who uses strong-jacket-bullets?

The hunter who wants to hit the animal properly without causing too much destruction of the game, but with certainty that even in unfavorable circumstances a good bleeding is obtained.

What is the effect of strong-jacket-bullets?

We do not wish to suggest that these bullets knock over and kill the animal immediately, if hit in any way and we believe that there is no bullet or cartridge for any hunting weapon, where this can be justly claimed.
However we assert, having proved by experience, that the strong-jacket-bullets give the greatest certainty that the animal hit will be killed without undue destruction of the game.

Why is the effect of the strong-jacket-bullets so favorable?

The front part is made so easily deformable that it always yields a good bursting and hitting effect also checking power, provided a normally charged cartridge is used.
The rear part of the bullet, about $^{1}/_{3}$ rd to $^{3}/_{5}$ th of the total weight of the bullet, remains, under all circumstances, a compact mass and even if shot at largest game with highest velocity of bullet and if hitting the greatest resisting part of the body (bones), it still assures a clean passage through the animal, if the correct cartridge is used for the particular animal. Especially to the hunter who uses a heavily loaded cartridge for reason of greater flatness of trajectory, or when coming across large game, the strong-jacket-bullet will give remarkable advantages.
The strong-jacket-bullet offers all the advantages of a heavily loaded cartridge, because as only a certain part of the bullet smashes up, even if a small animal is hit, an excessive destruction is rendered impossible.
In case of longitudinal hits, or very strong animals, or large calibres, where no proper passage is optained, the striking effect is so powerful in consequence of the entire transfer of bullet energy on the game-combined with the greater penetrating effect — that the animal is nearly always knocked down immediately, or very soon after being hit.

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What is the reason why the bullets used up to the present do not give the same favorable effects?

In the bullets used in the past, two chief kinds can be mentioned. The first kind of normal execution comprises all sorts of bullets, where the jacket is more or less drawn to the front, containing an undivided and homogeneous lead-core. In these bullets a regulation of the deformation is only possible by using a more or less hardened lead-core and by changing the length and thickness of the wall of the jacket. Thereby the jacket, nor in its rear part, was made so heavy that after the lead-core becoming detached, it still possessed sufficient weight for penetration. On the contrary it was however found that the jacket generally burst to pieces and in an irregular way, thus having no penetrating effects on account of the large surface and relatively low weight. Repeatedly and especially in high velocity cartridges, the jacket was already made very strong, in order to give a greater penetrating effect to the bullet. However, in the event of such bullets finding the slightest resistance in the game, or elastic parts containing little liquid, then the bullets deformed but slightly and the killing and stopping effects were insufficient. Such bullets could only be rendered effective under certain circumstances, but in cases parting from the rule, they had little or no effect at all. The second kind of hunting bullets to which we refer, are those where by using a hard core (2 parts, the rear part with a more hardened lead-core, steel shots, or like) it was the endeavour to obtain a good bleeding with all possible certainty. However some little reflection shows that even with these bullets the desired effect could not be obtained in such perfect manner, as is now the case with our new strong-jacket-bullets. The excellent hunting quality of our strong-jacket-bullets consists in the fact that the two main parts of the bullet behaving differently, possess quite different effects from each other, viz the smashing effect of the front part is independent from the penetrating effect of the compact mass of the reinforced jacket-part.

In bullets with hard core of any kind, it always proves a disadvantage, when the mass of the jacket is lost for its chief purposes. On account of its solidity, the jacket can never burst to such effect as a lead-core, and therefore its weight is lost for the bursting effect. On the other hand no penetrating effect can possibly be expected from this part of the bullet. In modern bullets of small calibre, the weight at disposal is very small and so results that in such bullets either the bursting effect suffers in favour of the penetrating effect, or vice-versa.

The proportions in strong-jacket-bullets must be considered quite ideal. The entire front part of the bullet in its mass, can smash completely, or the entire rear part of the bullet can serve fully for penetrating effects and especially, by a considerable large transverse section, obtain a large wounding, as the thickened part of the jacket acts as energy bearer.

In which calibers and in what kinds can these strong-jacket-bullets be delivered?

At present strong-jacket-bullets can be supplied in calibers 7 mm, 8 mm, 9,3 mm of the following kinds:

cal. 7 mm

weight 154 grains pointed form

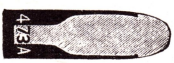
488 A

488 K

488 HS

cal. 8 mm

round nosed weight 196 grains



473 A

weight 185 grains pointed form Torpedo

463 A

463 K

463 HS

cal. 9,3 mm

weight 262 grains pointed form Torpedo

489 A

489 K

489 HS

cal. 9,3 mm

weight 286 grains round nosed

472 A

For which cartridges are the different types of bullets most convenient?

In general, we beg to say that we recommend strong-jacket-bullets only for modern cartridges with strong powder charge, especially also for cartridges with heavy powder charge i. e. high-velocity cartridges. For less powerful cartridges such as 8×48 R, 8×58 R, 8×51 and similar, the strong-jacket-bullets can scarcely offer any advantages, as with smaller powder charges coming into consideration, a strong splintering of the bullets cannot possibly be obtained. However for the cartridges 7×57, 8×57, 7×64, 8×64, 8×75 and cartridges with rim of the same calibers, as well as for the cartridges 8×60 (with and without rim) and for all cartridges of cal. 9,3 mm (9,3×72 R excepted) those strong-jacket-bullets are thoroughly recommended.

For the cartridges mentioned, with smaller powder charges the type A with large round lead-point is recommended, and for those who prefer hollow pointed bullets type „K" with large hole in the point. The type „HS" with hollow copper or aluminium-point, is only recommended by us for high velocity cartridges with special high powder charge, and especially only if used for heavy tropical animals as such bullets with covered hollow-point give sometimes insufficient bursting effects if shot with low powder-charge.

Strong-jacket round nosed bullets No. 472 A cal. 9,3 mm and No. 473 A cal. 8 mm, answer in shape, weight and diameter to the usual normal round nosed bullets 9,3×30 and 8×26, and can therefore be used in place of these ordinary round nosed bullets. It should however be first ascertained, whether the necessary free travel of the bullet exists (see last paragraph).

For which arms and lengths of barrel are the strong-jacket-bullets suitable?

We determine the powder-charges of the cartridges which we furnish with strong-jacket-bullets in such a manner that they give when shot out of arms of normal dimensions of barrel also normal gas-pressure, which every well constructed arm must withstand. This is also the condition for all arms used for shooting smokeless cartridges. An exception form especially the high-velocity cartridges, for which special prescriptions with regard to closing mechanism, dimensions of barrel and bore are to be observed.

For obtaining highest precision, we recommend that special attention is paid to the free travel of the projectile that is the way which the bullet will have to cross until it reaches with its guide-part the lands in the bore. The free travel should not be less than about 2 mm in order to avoid unnecessary high gas-pressure and not more than about 4—5 mm. In case of larger free travel of the bullet i. e. until the guide-part reaches the grooves, the precision is reduced without decreasing much the gas-pressure.

As dimensions of bore we recommend:
for bullets cal. 7 mm type 488, the normal dimensions, so that really good precision can be obtained,
with a diameter in the grooves: of abt. 7,24—7,26 mm
„ „ „ between the lands: „ „ 6,98—7,01 mm

for the bullets cal. 8 mm type 463: it must be considered that in diameter they come near to the pointed bullets and therefore cannot be recommended for barrels with narrower bore made for ogival bullets, as is known.

The **diameter of the cartridge-chamber** must be of the type for the pointed cartridges, amounting to at least 9,1 mm. As the most advantageous dimensions of bore, we recommend:

in the grooves	abt. 8,16—8,19 mm
between the lands	„ 7,88—7,92 mm

For round nosed bullets No. 473 A cal. 8 mm, we recommend the normal dimensions of bore for barrels as fixed for the ordinary round nosed (ogival) bullets cal. 8 mm, but in any case, the free travel of the bullet should be tested.

For the powder charge, we however recommend the maintenance of our normal powder charge for cartridges with strong-jacket bullets. The somewhat longer bullet, as against the ordinary round nosed (ogival) bullet, gives for the same length of cartridge a larger density of charge, so that a small difference in powder charge can be considered, especially if, for any reason a lower gas pressure should be required.

For the bullet 9,3 mm type 472 and type 489 are most suitable the normal dimensions of bore and we recommend:

in the grooves abt. 9,28—9,31 mm
between the lands „ 9,00—9,04 mm

As strong-jacket-bullets give in the barrel only a slight staving of the gas-check, barrels with large bore give under circumstances an unsatisfactory precision.

As **twists of the barrel** we recommend the normal ones and according to the present standard viz:

for cal. 7 mm abt. 22—24 cm
„ „ 8 mm „ 24 cm
„ „ 9,3 mm „ 30—36 cm

As for bullets and cartridge-cases small tolerances are permissable (as is the case in all articles manufactured in large quantities), we recommend that rifles should not be chambered from a cartridge taken by chance. Details of minimal dimensions are always readily given on demand by any ammunition-factory who is taking into consideration the tolerances of cartridge-cases and bullets and this should always be observed by the respective parties. Then jamming of cartridges will not occur, as is sometimes the case, when barrels are chambered from a cartridge only.

Immediately upon their introduction, our new strong-jacket bullets had an exceptional reception from Hunters, and we are pleased to learn that the experiences gained in actual use have entirely proved the good quality of these bullets. All information received fully testifies the high qualities claimed for them by us.

Instructions for ascertaining the free travel of bullets.

By "free travel" of bullets is meant the length a bullet must travel from the commencement of its movement until it reaches the wall part of the bore in the chamber slope. The simplest way to find this out, is to insert a cartridge (preferably an unloaded one) into the chamber of the barrel and close the bolt over it, then place down the nuzzle of the barrel a rod until it touches the bullet point, and mark the distance on the rod (see Fig. 1). Then remove the cartridge from the chamber and allow a bullet to drop into the barrel from the chamber end. The rod should then be inserted from the muzzle end again, and the distance from the bullet to the muzzle again marked on the rod (Fig. 2). The difference between the two marks then shows the free travel of the bullet.

All that is required to gain this important information is a cartridge, a bullet and a cleaning rod.

Figure 1

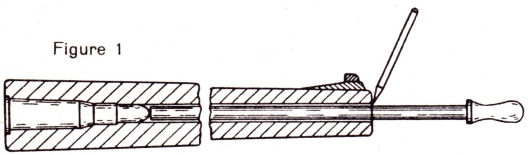


Figure 2

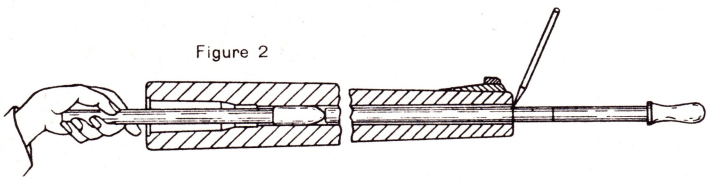


Figure 3